UNLEASHING THE POWER OF

FLEXIBILITY

On & Off-Grid solar & storage without the hassles

XESS

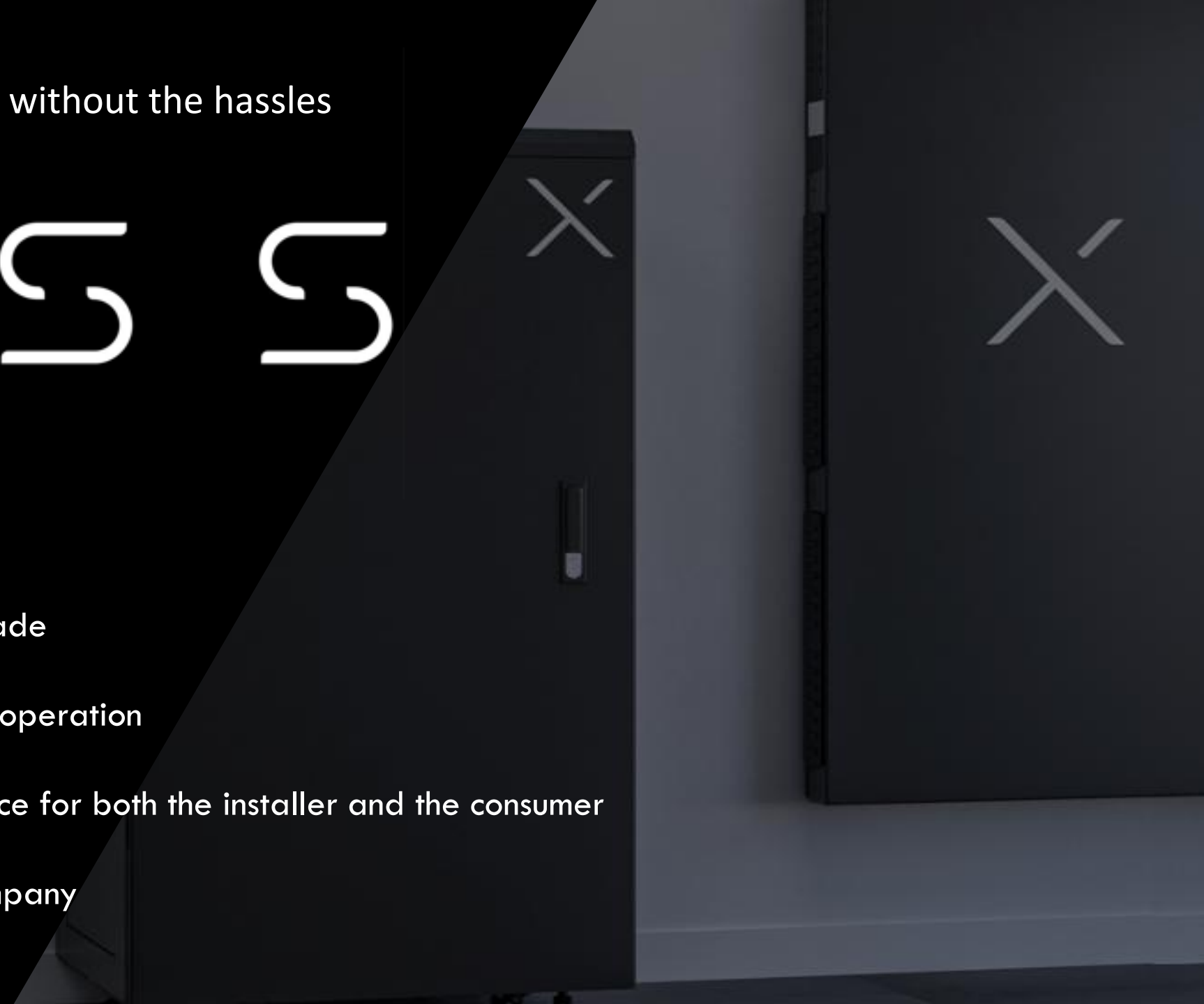
The complete solution

Easy to install, maintain, and upgrade

Providing long-lasting, hassle-free operation

Providing an exceptional experience for both the installer and the consumer

Supported locally by the ONE company



XESS

aerl

XESS is backed by AERL

The innovator of the first Maximum Power Point Tracking technology in 1985

Our major partner supplying manufacturing and design services

Australian manufacturer and innovator

ISO 9001 certified

On & Off-Grid solar & storage without the hassles

XESS

- On-Grid or Off-Grid Applications
- True UPS/Isolated functionality
- Grid independence
- Scalable

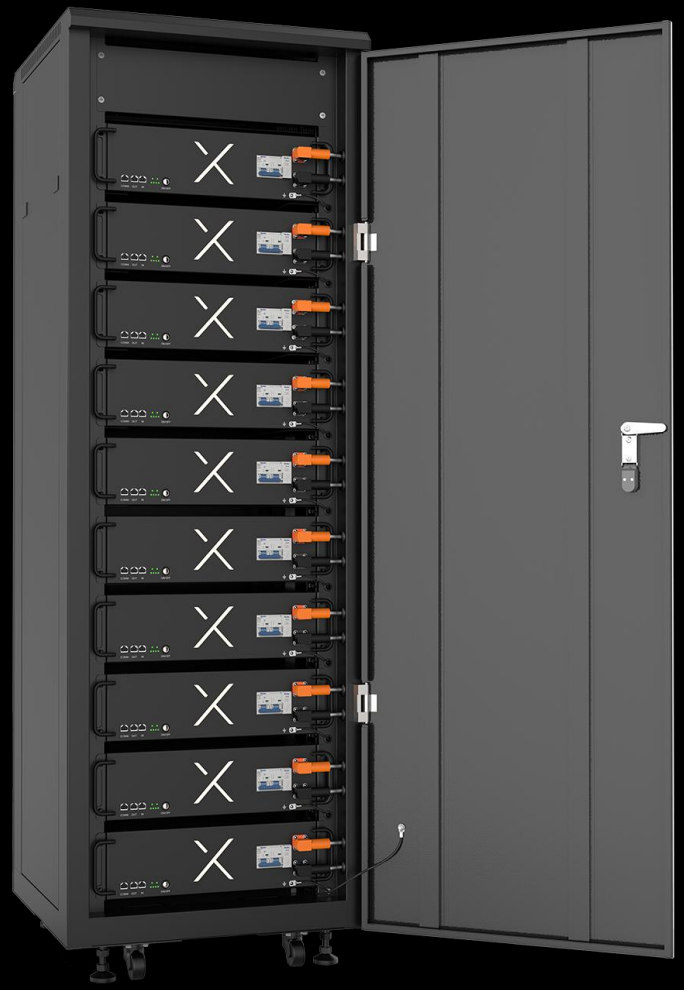
- Modular and Flexible
- Built-in Redundancy
- Black Start Capability
- Single or Three Phase

XESS ION

XESS ONE

XESS ION

XESS ION



XESSION-ENCR10

XESSION-ENCR6

XESSION-5120

XESSION-5120

5.12 kW hours capacity

Saleable to >409 kW hours

Managed and Self-Managed operation

-10 to +55°C Charging range

Hot Swappable with built in redundancy

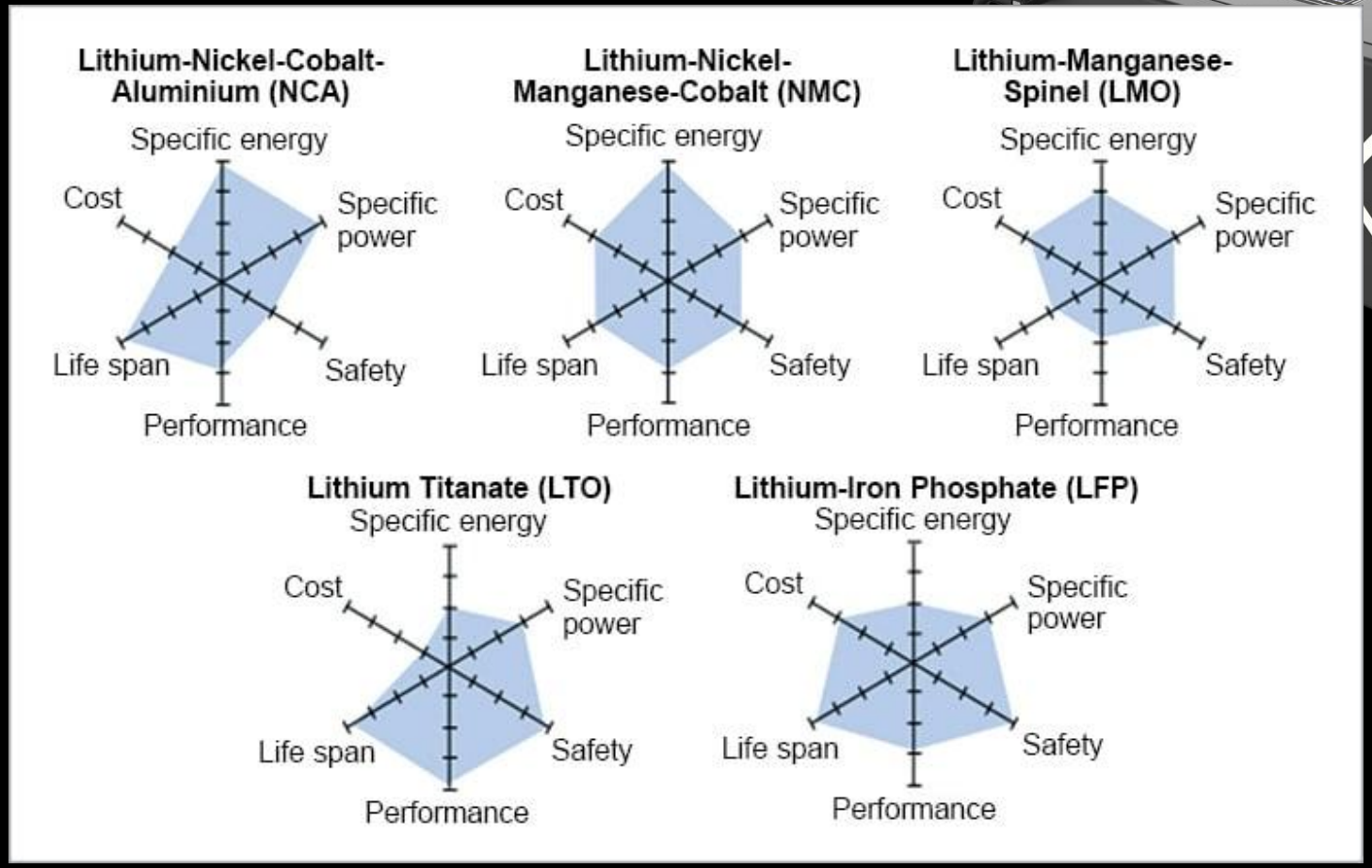
1C charge and discharge

Active Cell Balancing prolongs cell life

Increased system reliability when connected to an XESS ONE

XESSION-5120

LFP LiFePO4 Chemistry



XESSION-5120

Prismatic Cell Technology

Superior Cell Balancing with Active Cell Balancing

The Active Balancer monitors and transfers current between cells within a bank. The BMS allows energy from cells with a higher SOC, to transfer to cells with a lower SOC during the charge and discharge cycle, ensuring they are better balanced drastically reducing the chance of one particular cell in the bank being overcharged/discharged

Some batteries use Passive balancing. Passive balancing is ideal for low-cost, small-capacity applications with limited energy requirements Passive balancing only performs energy transfer between cells after the cells reach a targeted voltage or at the end of the charge cycle.

Active balancing is most effective for high-power applications where efficiency and performance are important. This is particularly accurate for battery packs of electric vehicles and energy storage applications where life cycle is important.

XESSION-5120

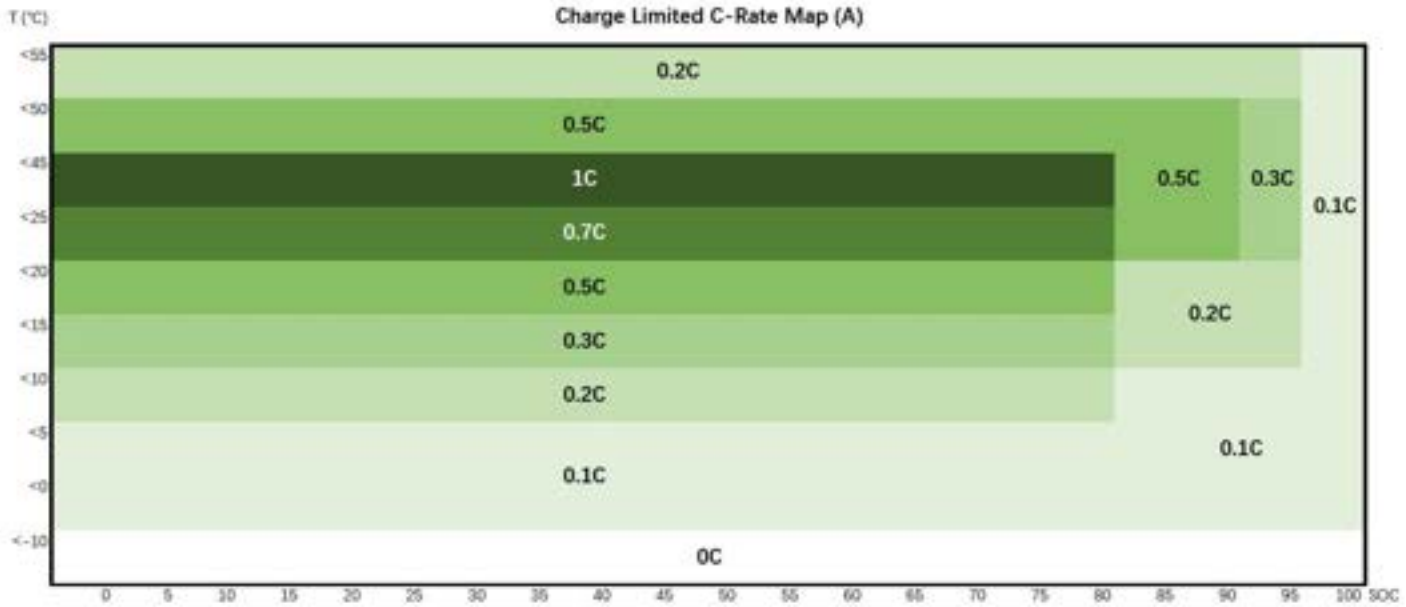
-10 to +55°C Charging

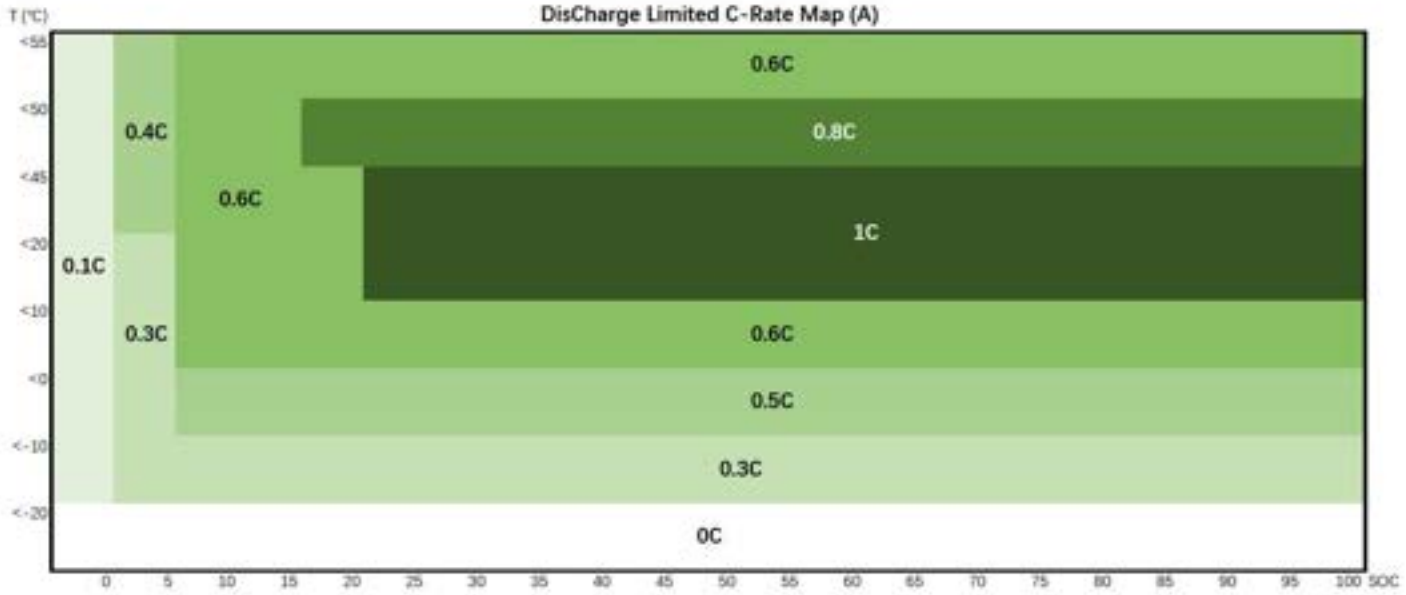
0 to +55°C Discharge

1C Discharge and Charge

100A Discharge per battery

200A Surge for 5 seconds





XESSION-5120

Quick-connect battery terminals

Up to 100% usable capacity

Weight 43kG and IP40 protection

Dual Pole Circuit Breaker

Integrated electronic circuit breaker trip for cell protection in the event of a BMS failure

Installer field serviceable BMS

XESSION-5120

64 batteries in parallel (328 kWh)

Please enquire for larger systems

Warranted to 70% SOH EOL

Warranted to 5.36MWh throughput

XESSION-5120

XESS ION and XESS ONE Advantage

Managed operation
- Battery In control
- Battery life managed
- Extends overall battery life

Self-Managed fallback if comms are lost
- The system remains operating
- No interruption is power
- Batteries revert to Self-managed mode
- XESS ONE reverts to Voltage mode
- Reduces urgency to attend site

XESSION-5120

Cluster Control Advantage

Managed Operation

- If one battery needs to turn off, the rest will remain operating without interruption in Power.
- Allows hot swappable replacement.

Self-Managed Operation

- The batteries work as a cluster, ensuring that the batteries are working effectively, with a master overseeing
- If one battery needs to turn off, the rest will remain operating without interruption in Power.
- Allows hot swappable replacement.

XESSION-5120

Managed and Self-Managed operation with other brands of inverters, allowing installers to standardize their battery offer

Managed:
- Victron
- DEYE
- Noark
- AERL
- XESS ONE

Self-Managed
- Selectronic
- SMA
- Solis
- Lead Acid Replacement

XESSION-ENCR6

Fast and simple to install, reducing time on site

Up to 30 kWh of storage in one cabinet

Caster wheels for easy positioning

4 x Load-bearing Feet

625 A rated battery busbar

Pre-wired for easy installation

Parallel up to 10 cabinets

IP20

XESSION-ENCR6

Fast and simple to install, reducing time on site

Up to 50 kWh of storage in one cabinet

Caster wheels for easy positioning

4 x Load-bearing feet

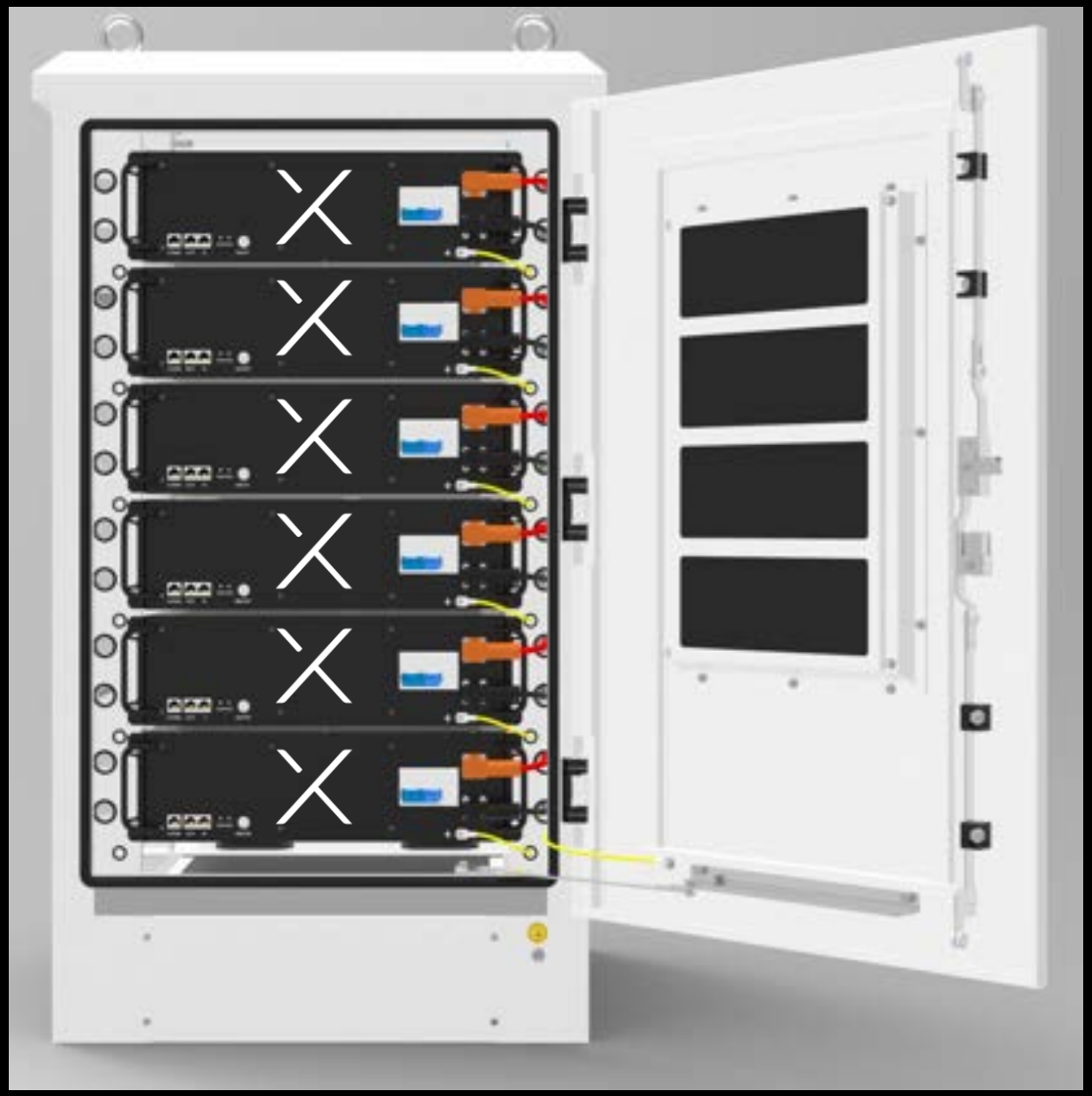
1250 A rated battery busbar

Pre-wired for easy installation

Parallel up to 6 cabinets

IP20

XESSION-OUTDOOR IP55



Fast and simple to install, reducing time on site

6 and 10 battery IP55 Outdoor cabinets are now available

Lifting harness or fork into position

Pre-wired for easy installation

Parallelable

XESS ION WARRANTY

XESSION-5120

- Up to 10-year warranty
- 7-year standard product warranty
- +3 extra years when warranty registered

XESSION-ENCR6 & ENCR10

- 2-years standard warranty

XESS ONE

XESS ONE

The Ultimate in Modular Redundancy and System Expansion

MODULAR

XESSONE-CHASSIS

XESSONE-INVT

XESSONE-CHRGE

MODULAR

XESSONE-INVT

2.4 kW AC output

2.7 kW AC Input

2.7kW DC battery charge power

48V DC Nominal battery input

200% surge power for 2 seconds

125% surge power for 15 seconds

Isolated output

Plug-and-play installation

Active cooling

Field serviceable

MODULAR

XESSONE-CHRGE

Australian Designed and Manufactured

8.0 kW PV input

600 V DC PV input (170-500 V DC MPP)

18 A input,

25 A shot circuit current

4.0 kW DC battery charge power

48V DC nominal battery input (40 – 60 VDC)

Earth leakage detection

Plug-and-play installation

Active cooling

Field serviceable

MODULAR

XESSONE-CHASSIS

Australian Designed and Manufactured

2 x MPPT slots

4 x Inverter slots

Modular and upgradeable

Integrated communications

AC and DC wiring connections

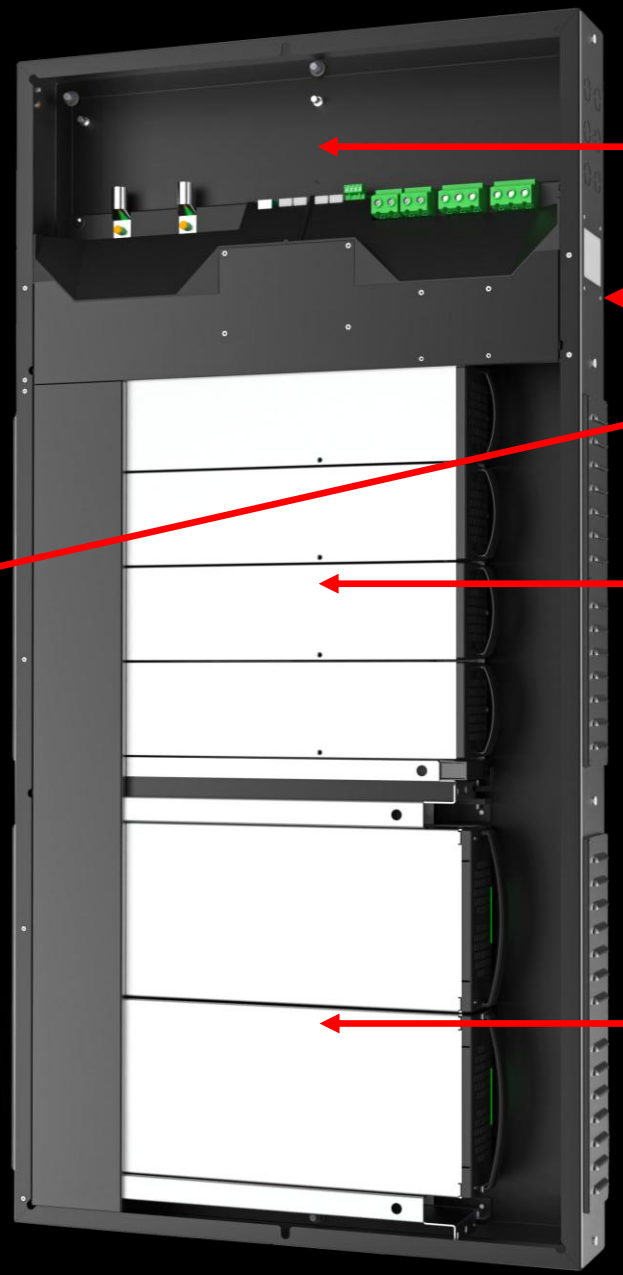
Easy to navigate LED status indicators

Lightweight, quick & easy to install

Thermally controlled active cooling

IP53

XESS ONE



AC and DC connection

Intuitive
Status LEDs

Up to 4 Inverters
XESSONE-INVT

Up to 2 MPPTS
XESSONE-CHRGE

Example ONE

4.8 kW AC Output,
5.4kW AC Input
8 kW PV input,
4 kW PV to DC Charge,
5.4 kW AC to DC Charge

XESSONE-1P2

Example TWO

7.2 kW AC Output,
8.1kW AC Input
8 kW PV input,
4 kW PV to DC Charge,
8.1 kW AC to DC Charge

XESSONE-1P3

Example THREE

7.2 kW AC Output,
8.1kW AC Input
16 kW PV input,
8 kW PV to DC Charge,
8.1 kW AC to DC Charge

XESSONE-2P3

Example FOUR

9.6 kW AC Output,
10.8 kW AC Input
16 kW PV input,
8 kW PV to DC Charge,
10.8 kW AC to DC Charge

XESSONE-2P4

XESS ONE

FEATURES

Modular Flexible Design

Isolated Output

Black Start Functionality

Superior System Redundancy

Integrated Design

Plug and Play Technology

N+1 Redundancy

Fast and easy to install

Australian Designed and Manufactured

XESS ONE

SINGLE UNIT

Scalable from 4.8 kW to 9.6 kW AC Output

Scalable from 8 kW to 16 kW PV Input

Scalable from 4 kW to 8 kW PV Charge

Scalable from 5.4 kW to 10.8 kW AC Charge

Integrated Communications and control
- Canbus, WiFi, Bluetooth, Ethernet, RS485
- 2 x Relay outputs

Australian Designed and Manufactured

XESS ONE

PARALLEL STACKING

Is one XESS ONE not enough?

Parallel up to 4 units per phase

Increased performance

Each XESS ONE works independently and as part of a cluster

Increased system redundancy

Australian Designed and Manufactured

XESS ONE

THREE PHASE

Minimum one unit per phase

Parallel up to 4 units per phase

From 15kW AC Output

Up to 115kW AC Output

Australian Designed and Manufactured

XESS ONE

MPPT COMPATIBILITY

Need More PV than the XESS ONE Can handle?

Seamlessly integrate with AERL COOLMAX

Plug and Play with CAN bus integration

Australian Designed and Manufactured

XESS ONE

AUTOMATIC SYSTEM RECOVERY

Black Start Functionality with Solar

- System will automatically recover from a low SOC shutdown when the sun comes out.
- No need for manual interaction.

Black Start Functionality with Generator

- Starting a generator will allow AC loads to be powered instantly, waking the system up from a low SOC shutdown and allow batteries to charge.

Australian Designed and Manufactured

XESS ONE

N+1 REDUNDANCY

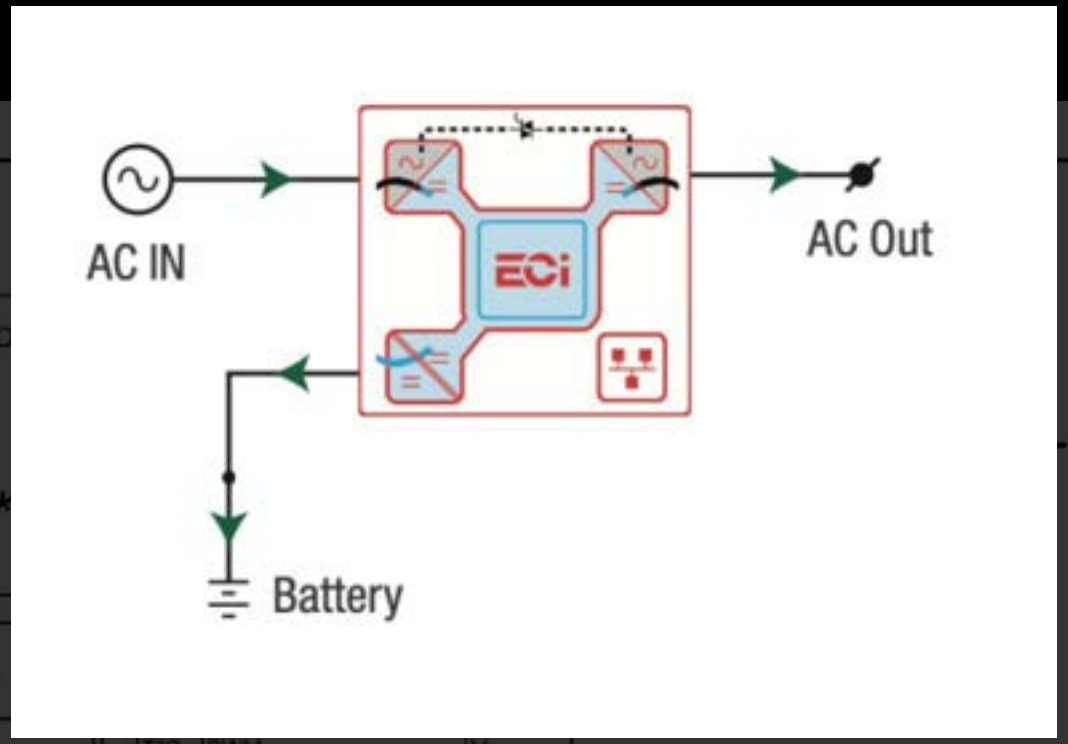
- Each Modular Inverter operates independently and is part of the cluster
- If one inverter goes offline, the rest keep operating
- Hot Swappable inverter technology allows no interruption to swapping or adding more inverter modules
- Low Mean time to install and repair. Making installation and repairs a breeze for installers

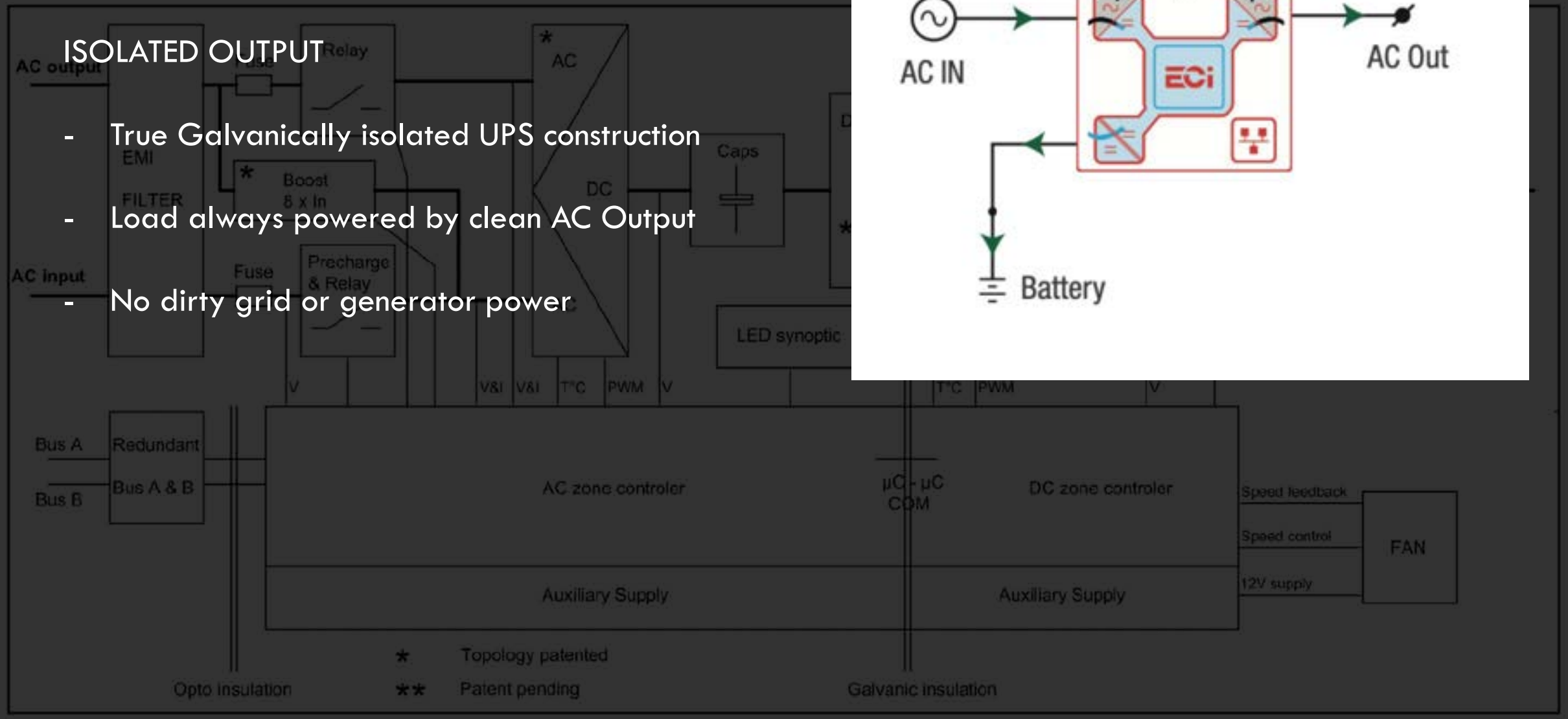
Australian Designed and Manufactured

XESS ONE

ISOLATED OUTPUT

- True Galvanically isolated UPS construction
- Load always powered by clean AC Output
- No dirty grid or generator power





XESS ONE

SELF-MANAGED FALLBACK

If communications are lost to the battery

- XESS ONE falls back to Voltage control mode
- Batteries fallback to Self-Managed mode
- Lights and power stay on
- System keeps operating
- Reducing the urgency to return to the site

XESS ONE

LOW MEANTIME TO INSTALL & REPAIR

- Field Serviceable
- Installer hot-Swappable Inverter and Battery Technology
- Plug and play with cluster programming
- Automatic battery, inverter, and MPPT detection
- Installer Serviceable fans
- Installer Serviceable battery BMS

XESS ONE

On-Grid and Off-Grid Applications

XESS ONE

Warranty

Up to 10-year warranty

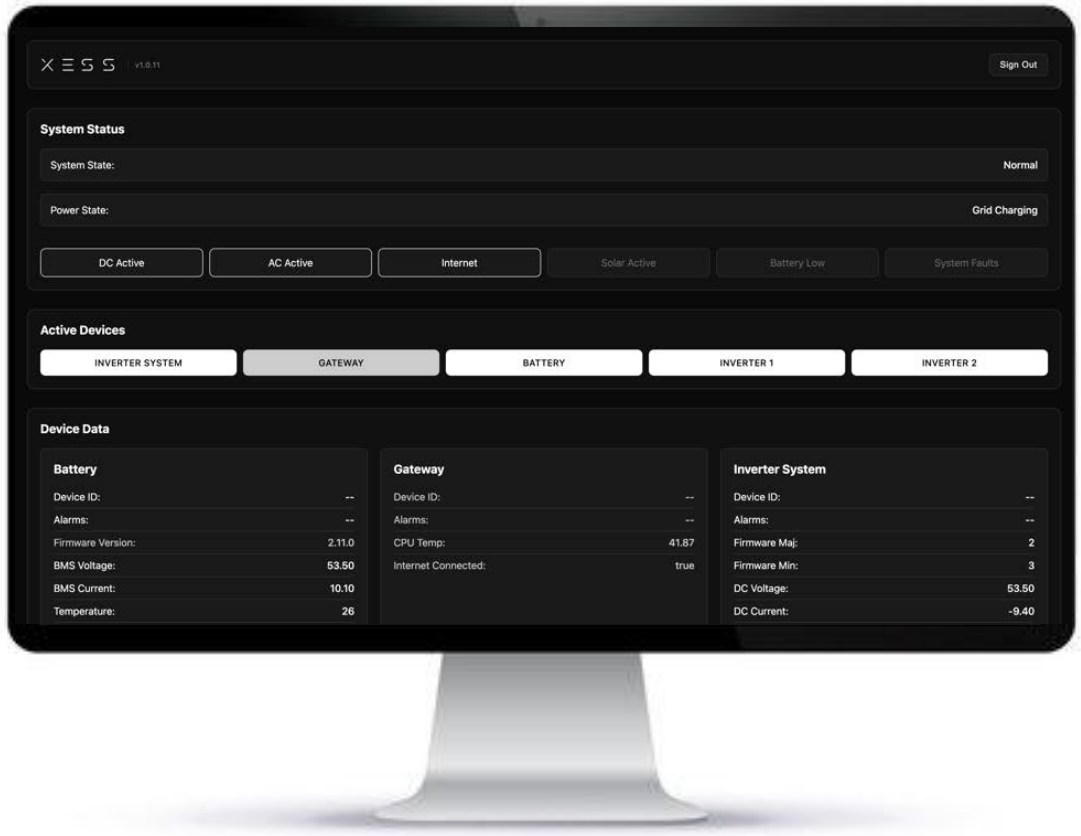
7-years standard warranty

+3 extra years when registered online, installed with XESS Ion batteries and connected to XESS.cloud for remote monitoring

+3 extra 3 years can be purchased if site remote data is not available.

XESS PROGRAM

XESS PROGRAM



Connect via WiFi Hotspot

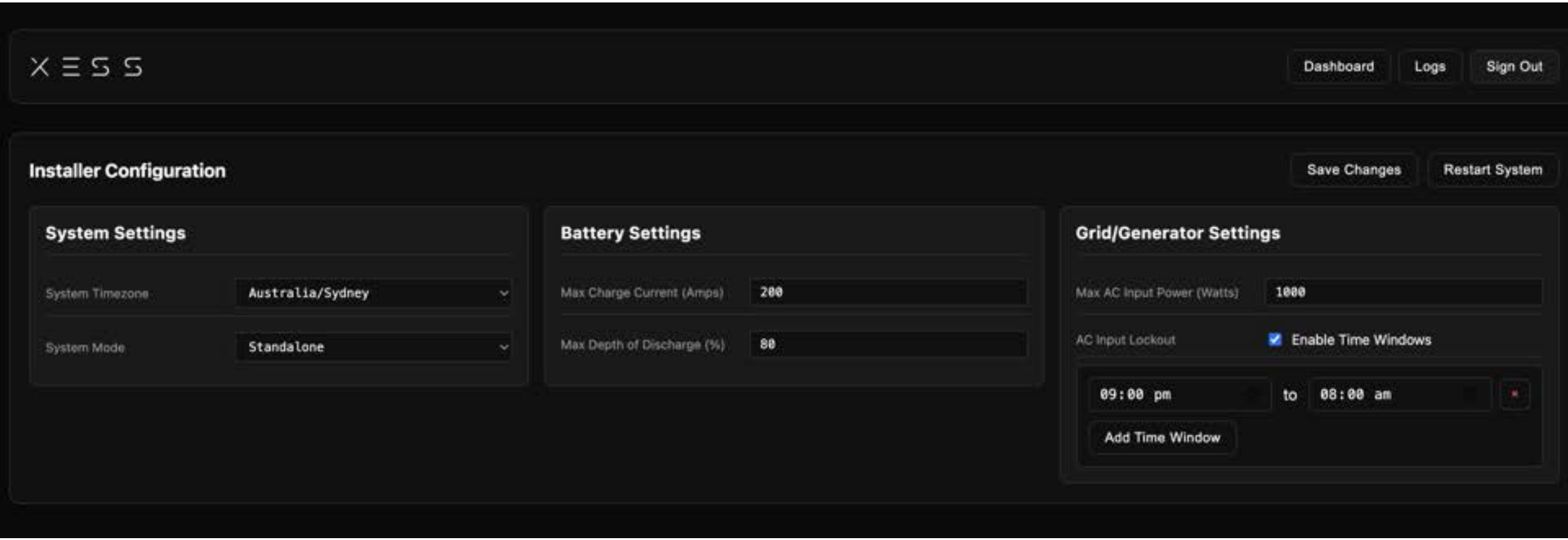
Installer, Consumer, and Administration login

Local programming

Local system performance view

Detailed installer information for commissioning

XESS PROGRAM



XESS v1.0.11

Sign Out

System Status

System State:	Normal
Power State:	Grid Charging

DC Active | AC Active | Internet | Solar Active | Battery Low | System Faults

Active Devices

INVERTER SYSTEM | GATEWAY | BATTERY | INVERTER 1 | INVERTER 2

Device Data

Battery

Device ID:	--
Alarms:	--
Firmware Version:	2.11.0
BMS Voltage:	53.50
BMS Current:	10.10
Temperature:	26

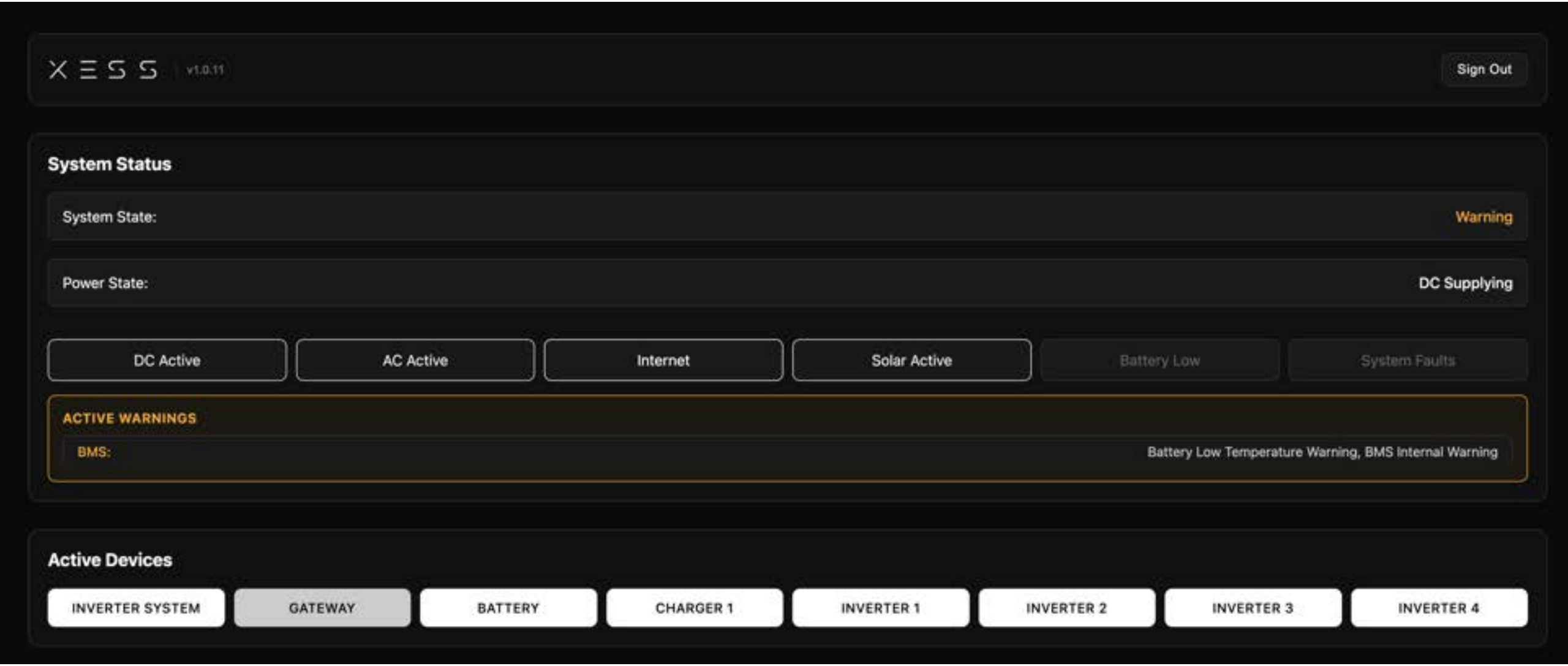
Gateway

Device ID:	--
Alarms:	--
CPU Temp:	41.87
Internet Connected:	true

Inverter System

Device ID:	--
Alarms:	--
Firmware Maj:	2
Firmware Min:	3
DC Voltage:	53.50
DC Current:	-9.40

XESS PROGRAM



Chargers

Charger 1

Device ID:	10
Alarms:	None
In Volts:	288.91
In Current:	0.79
Out Volts:	53.43
Out Current:	3.21
Temperature:	27.25
PV Power:	171

Inverters

Inverter 1

Device ID:	0
Alarms:	--
Serial Number:	0
Module State:	Normal
Firmware Version:	0
DC Voltage:	53.30

Inverter 2

Device ID:	0
Alarms:	--
Serial Number:	0
Module State:	Normal
Firmware Version:	0
DC Voltage:	53.90

Inverter 3

Device ID:	0
Alarms:	--
Serial Number:	0
Module State:	Normal
Firmware Version:	0
DC Voltage:	53.40

Inverter 4

Device ID:	0
Alarms:	--
Serial Number:	0
Module State:	Normal
Firmware Version:	0
DC Voltage:	53.20

Device Data

Battery

Device ID:	--
Alarms:	Multiple Alarms
Firmware Version:	0.0.0
BMS Voltage:	53.70
BMS Current:	-2.50
Temperature:	16
State Of Charge:	99
State Of Health:	100
Charge Voltage Limit:	57.60
Max Charge Current Limit:	42.50
Max Discharge Current Limit:	425
Discharge Voltage Limit:	46.40
Force Charge Flag:	false

Gateway

Device ID:	--
Alarms:	--
CPU Temp:	42.35
Internet Connected:	true

Inverter System

Device ID:	--
Alarms:	--
Firmware Maj:	2
Firmware Min:	3
DC Voltage:	53.50
DC Current:	2.90
DC Power:	150
AC Input Voltage:	0
AC Input Current:	0
AC Input Frequency:	0
AC Output Voltage:	232.90
AC Output Current:	0.50
AC Output Power:	0
Power Factor:	0
AC Output Frequency:	50
Available Power W:	9600
Available Power VA:	12000
Modules Configured:	2

XESS

Dashboard | Configuration | Sign Out

System Logs

Download Recent | Download All

Time	System State	Power State	DC Active	AC Active	Solar Active	Battery Low	Has Faults	CPU Temp	Internet Connected	InView DC
2025-02-17 16:21:54.4	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	43.8	True	53.9
2025-02-17 16:22:54.5	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	43.8	True	53.9
2025-02-17 16:23:55.0	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.4	True	53.9
2025-02-17 16:24:55.8	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	43.8	True	53.9
2025-02-17 16:25:56.5	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.8	True	53.9
2025-02-17 16:26:56.6	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	43.3	True	53.9
2025-02-17 16:27:57.6	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.8	True	53.9
2025-02-17 16:28:57.9	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.8	True	53.9
2025-02-17 16:29:58.1	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	43.8	True	53.9
2025-02-17 16:30:59.2	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.8	True	53.9
2025-02-17 16:31:59.8	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.8	True	54
2025-02-17 16:33:00.8	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	42.8	True	54
2025-02-17 16:34:01.7	Warning	Solar Charging	[true, True]	[true, True]	[true, True]	False	False	43.3	True	54
2025-02-18 11:06:10.2	Startup	Idle	[false, False]	[false, False]	[false, False]	False	False	--	--	52.9
2025-02-18 11:07:10.3	Launchpad	DC Supplying	[true, True]	[true, True]	[true, False]	False	True	38	True	52.9

XESS MONITOR

XESS MONITOR

Fleet Management

Live System Performance

Stored Detailed Data for Performance Analysis

All Connected Components on the One Platform

Installer view access

Consumer view access

XESS MONITOR

COMING SOON

Performance Alerts for Preventative Maintenance

Performance Alerts Recommending System Upgrades

The installer remote setting changes

XESS VIEW

XESS VIEW – Coming Soon

Installer

- System Commissioning

End-User

- Remote System Monitoring (Bluetooth, Wi-Fi or Ethernet)
- Alerts and System Notifications
- System Performance Statistics
- System Upgrade Advice

CASE STUDY #1

Location: Chrohamhurst QLD Australia

Application: Off-Grid

System Details

- 39 x 440W Solar Panels
- 1 x XESSION-ENCR6 Battery Cabinet
- 4 x XESSION-5120 5.12kWh LFP Batteries
- 1 x XESS ONE
  - 2 x 8/4kW XESSONE-CHRGE
  - 3 x 2.7/2.4kW XESSONE-INVT
- 1 x AERL SRX 8/4kW MPPT

CASE STUDY #1

- This site Has an existing large 3-phase off-grid system running the homestead.
- XESS System was selected due to its pleasing appeal and upgradeability
- The power system is power glamping tents and the camp kitchen for guest accommodation.
- This system integrated an extra AERL MPPT for increased PV Penetration
- Pending upgrade
  - Additional XESSONE-INVT for increased load
  - Integration of Automatic start generator

CASE STUDY #2

Location: Medowie NSW Australia

Application: Off-Grid

System Details

- 14 x Phono 440W Helios Solar Panels
- 1 x XESSION-ENCR6 Battery Cabinet
- 3 x XESSION-5120 5.12kWh LFP Batteries
- 1 x XESS ONE
  - 2 x XESSONE-CHRGE
  - 2 x XESSONE-INVT

CASE STUDY #2

- This site has been disconnected from the main grid and is being developed as a retreat focusing on wellness and breathwork.

- XESS System was selected due to its versatility and ability to easily upgraded as the site is being developed.

- Pending upgrade
  - An additional 6,1kW of Phono Helios Solar Panels
  - Integration of an automatic start generator

- Future XESS upgrades
  - 2 x additional XESSONE-INVT modules to expand the system from 4.8kW AC output to 9.6kW AC Output
  - 3 x extra batteries to increase stored capacity to 30.72kWhs

This

Replaces This

This

Replaces This

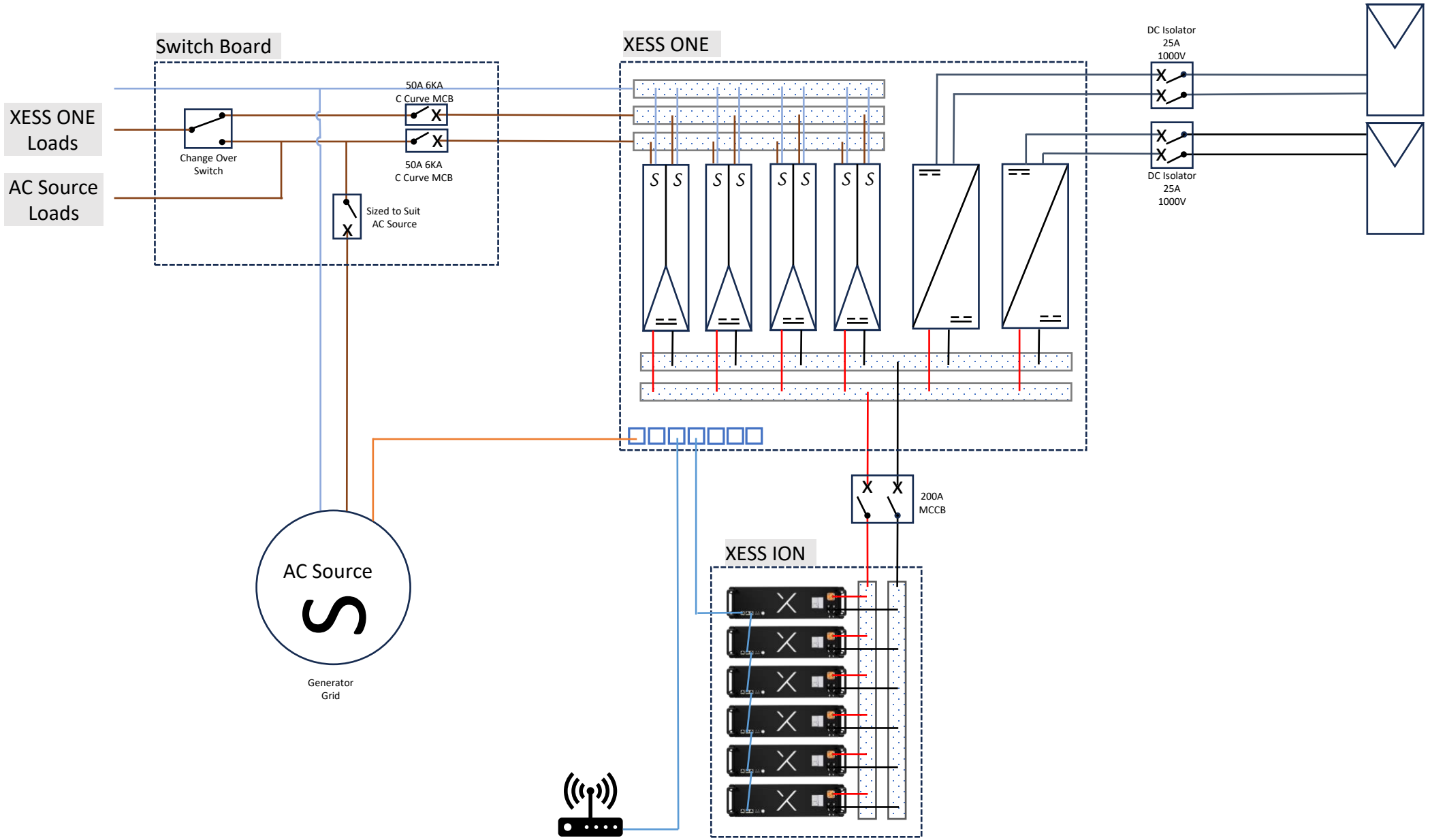
This

Replaces This

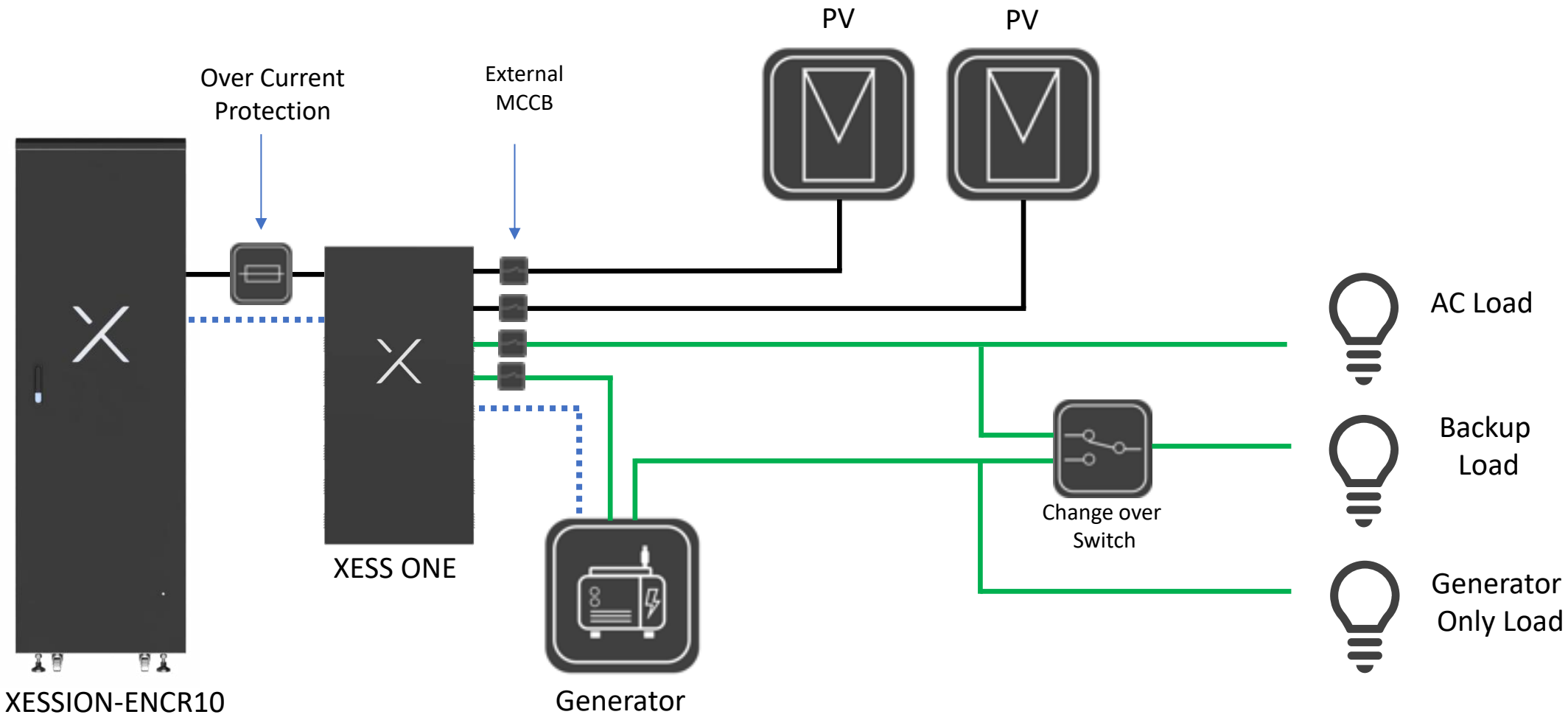
This

Replaces This

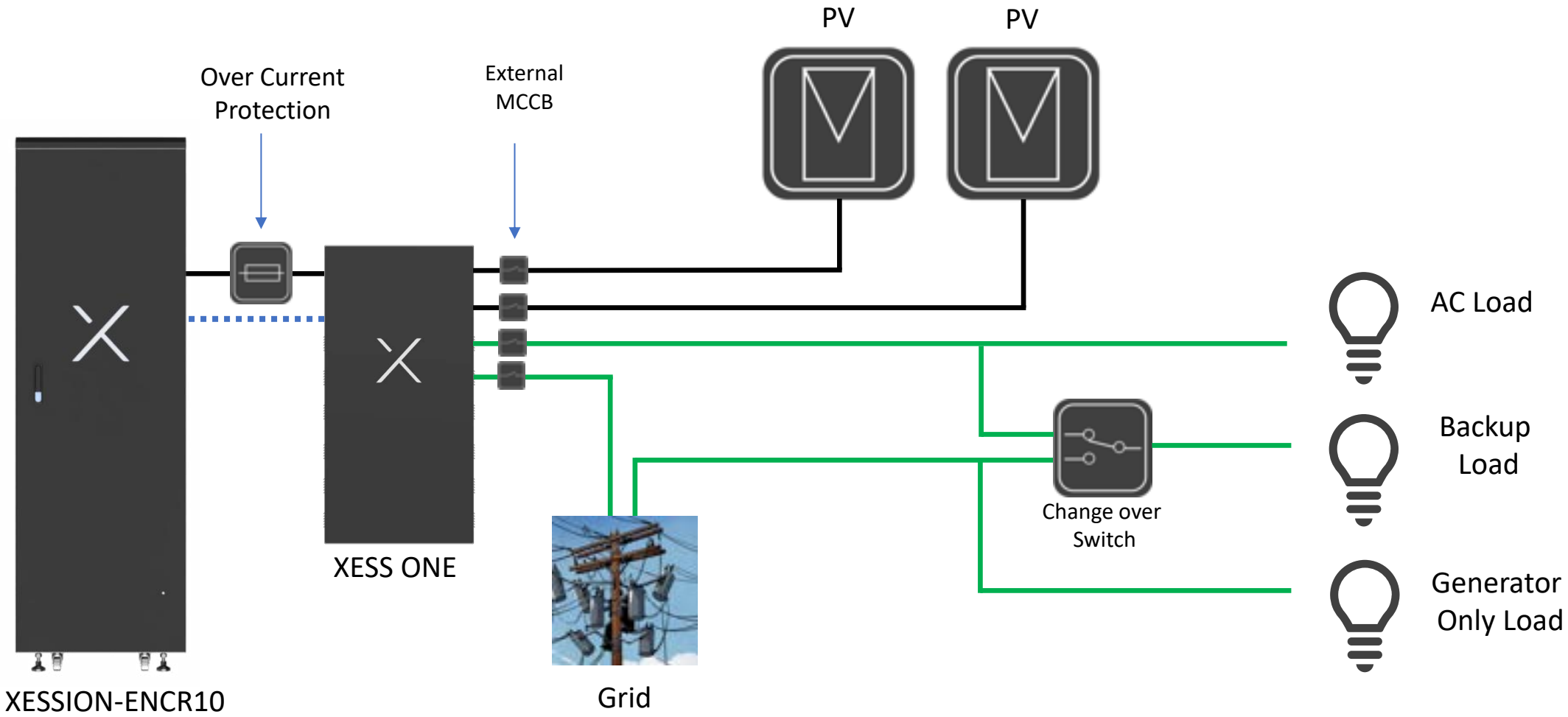
1 PH, DC coupled, Line Diagram



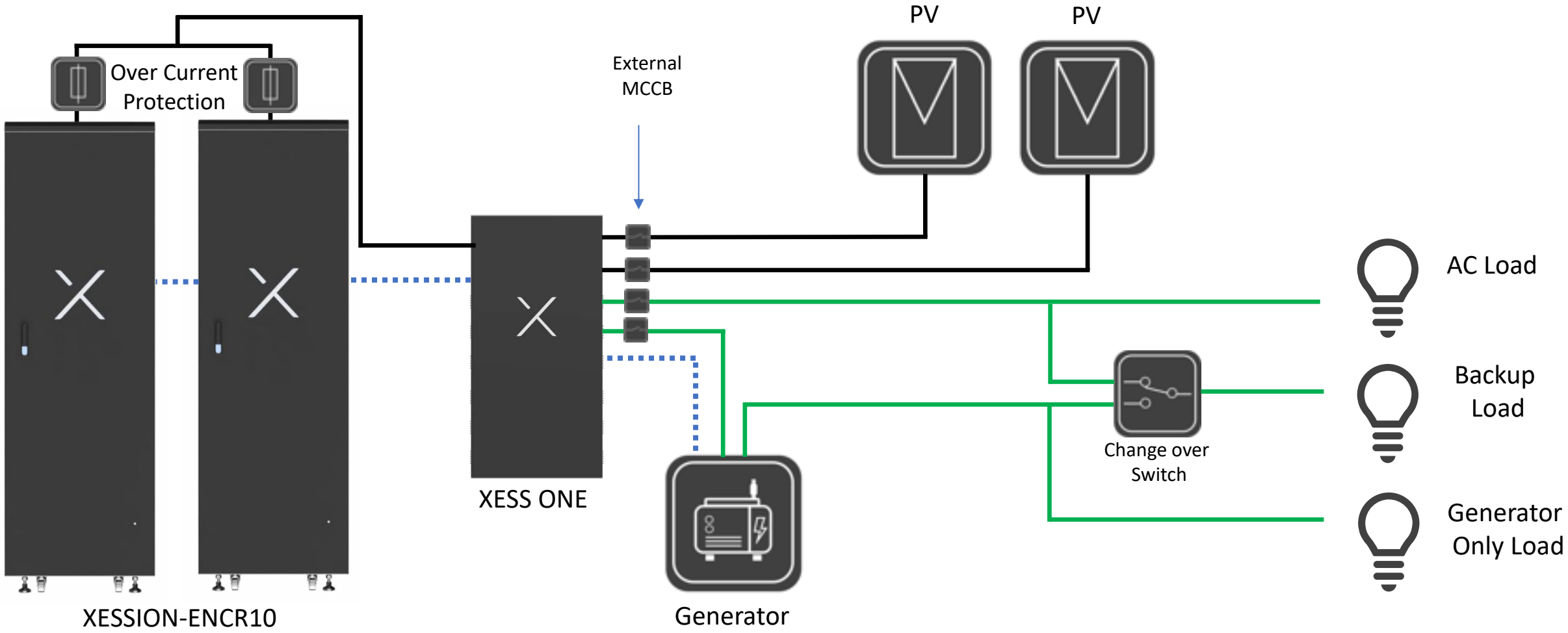
Off-Grid 1 PH, DC coupled, 10 battery cabinet



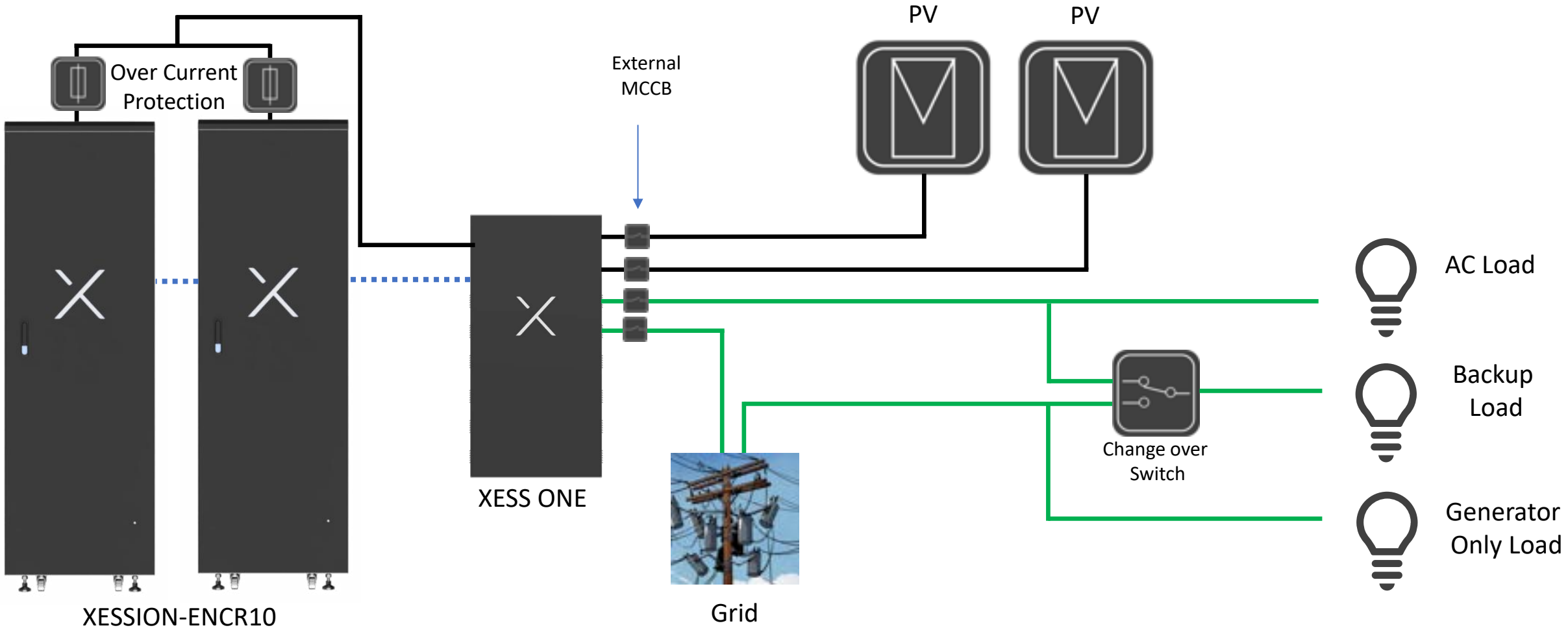
On-Grid1 PH, DC coupled, 10 battery cabinet



Off-Grid1 PH, DC coupled, 2 x 10 battery cabinet

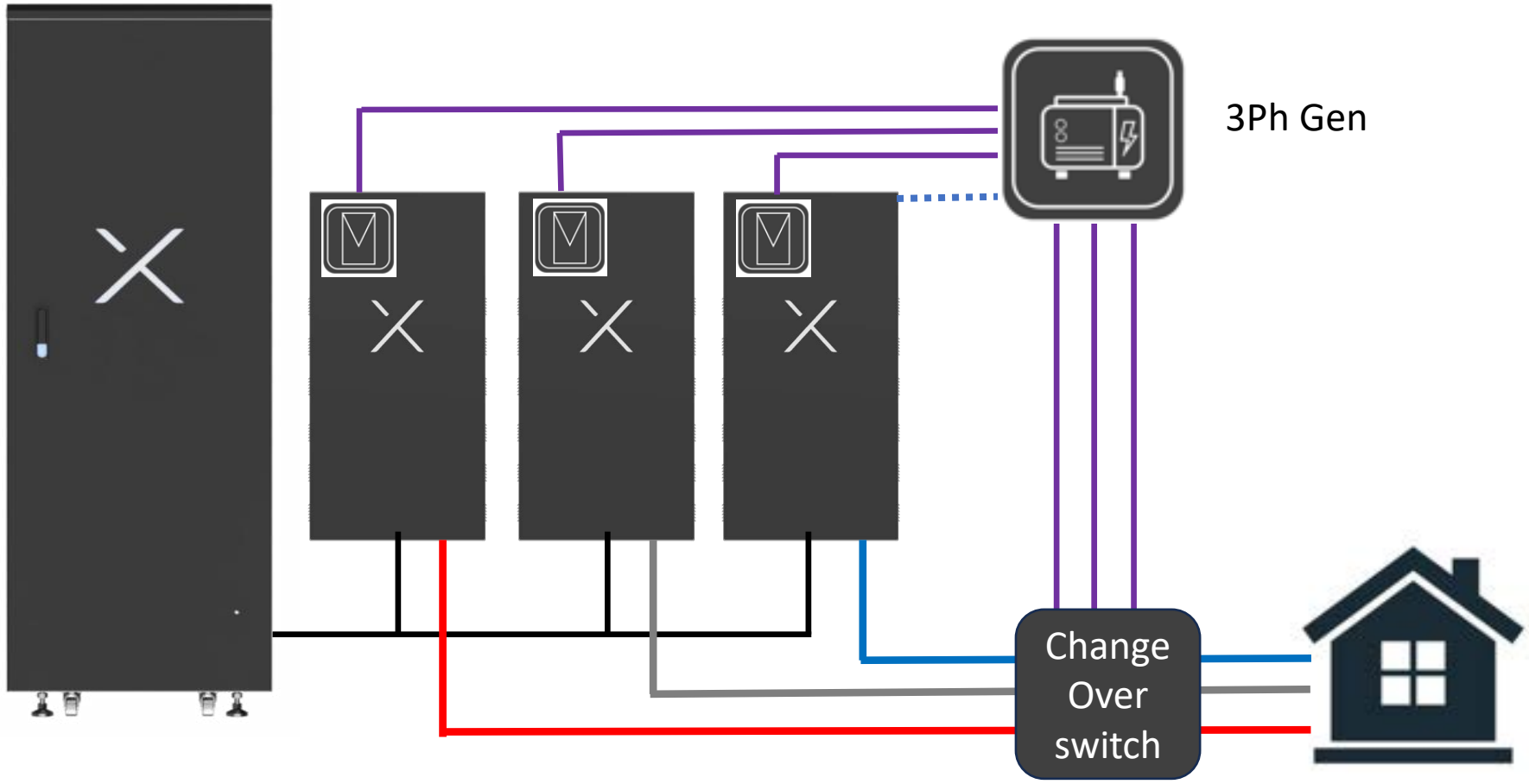


On-Grid1 PH, DC coupled, 2 x 10 battery cabinet



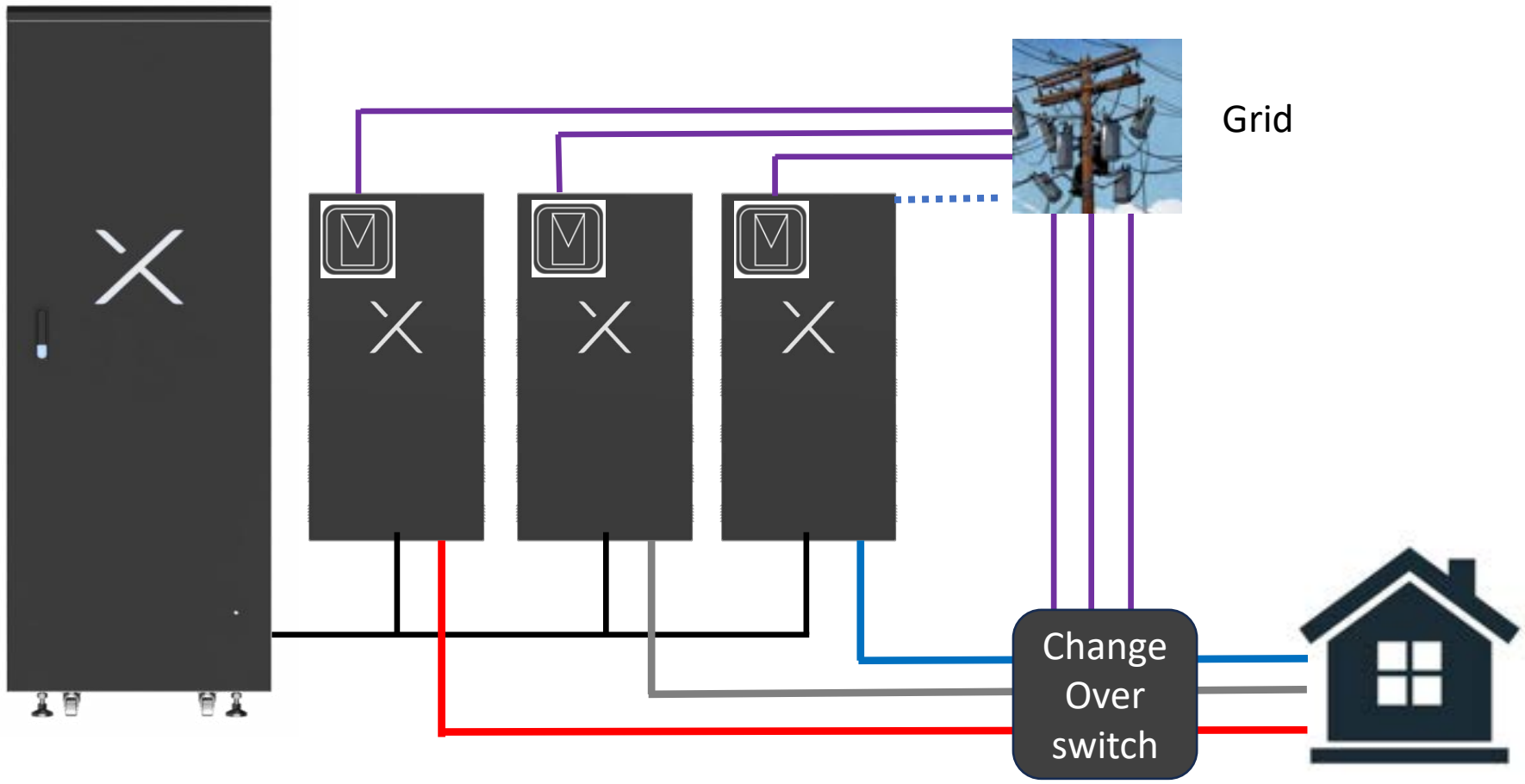
XESS

Off-Grid 3 PH



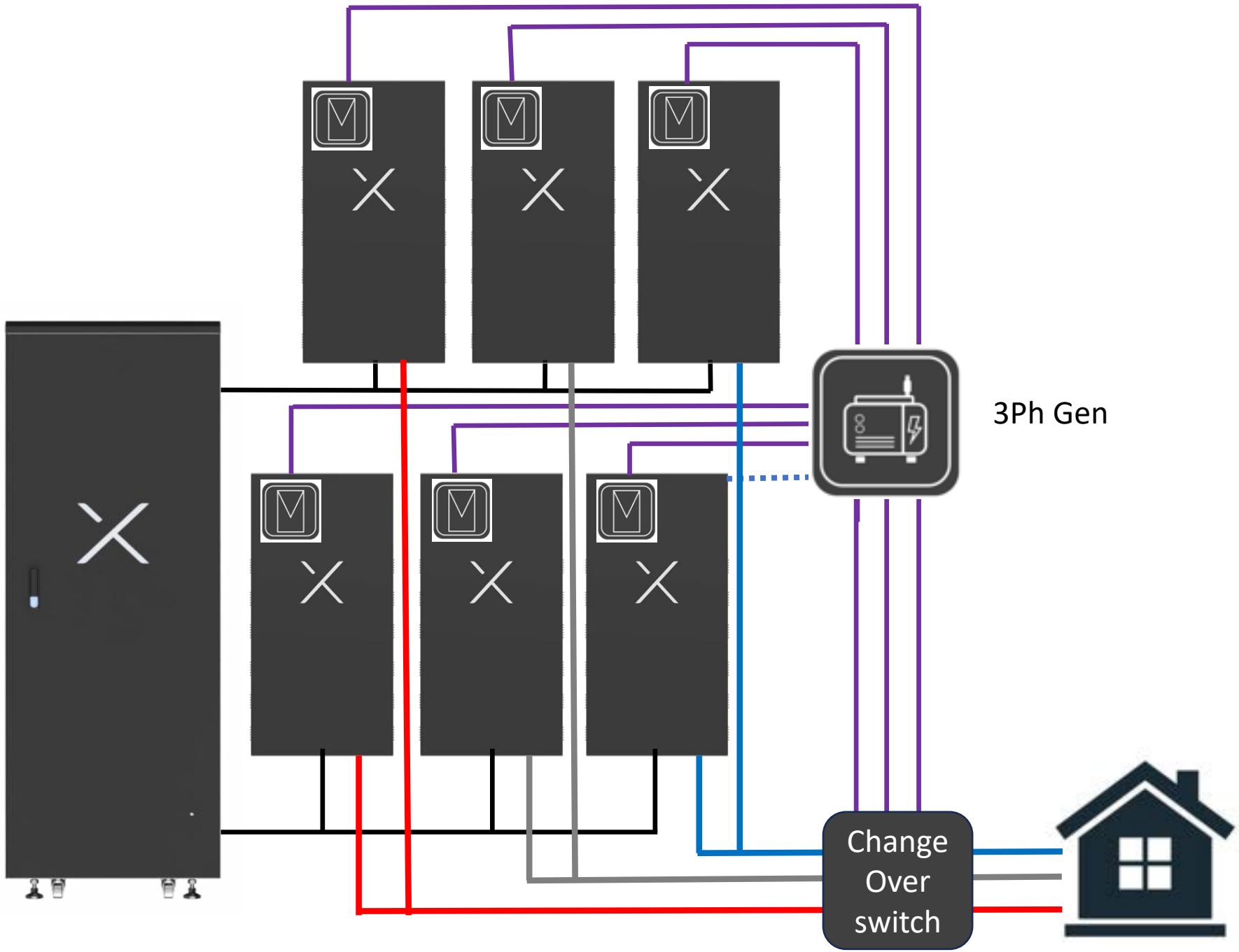
XESS

On-Grid 3 PH



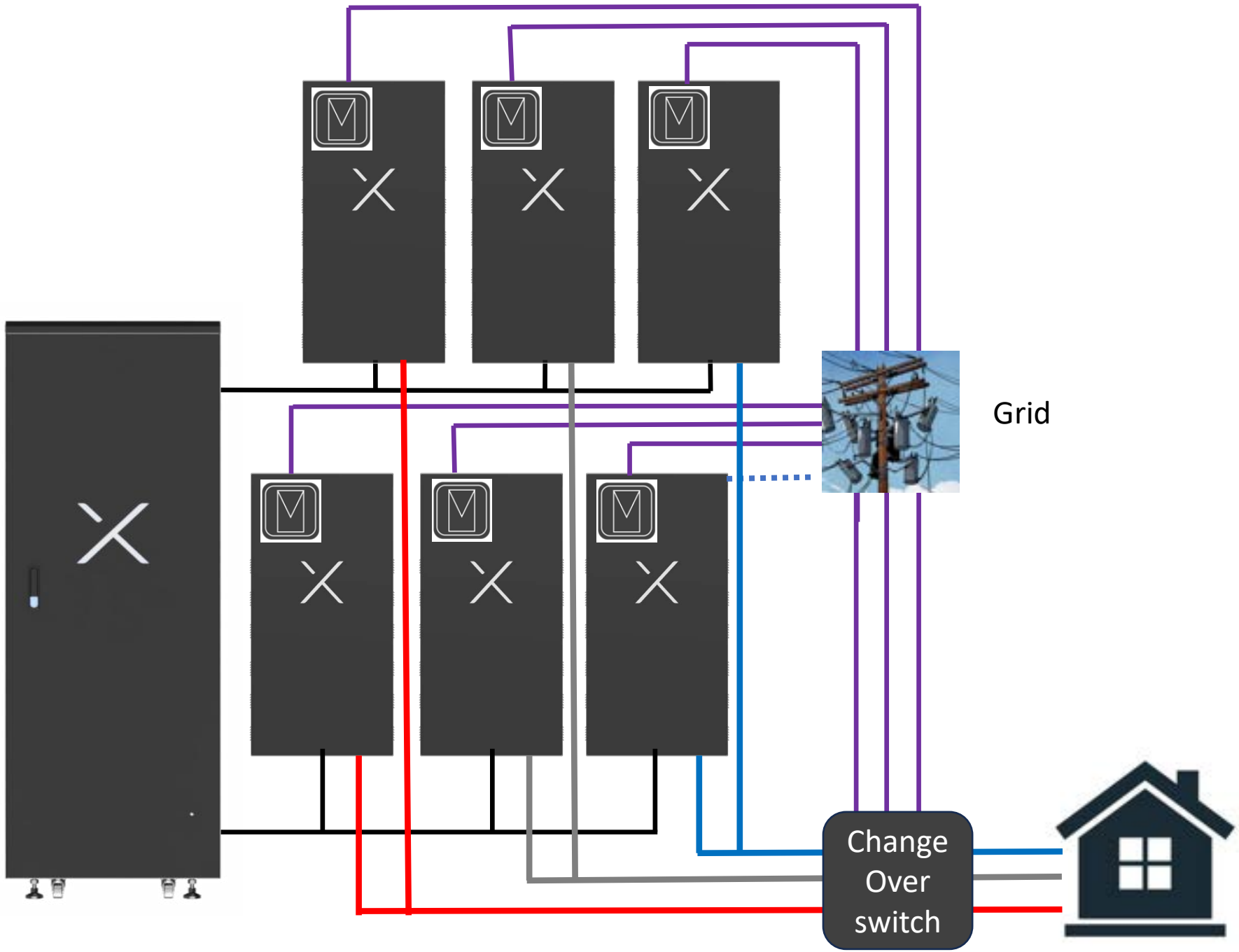
XESS

Off-Grid 3 PH Parallel



XESS

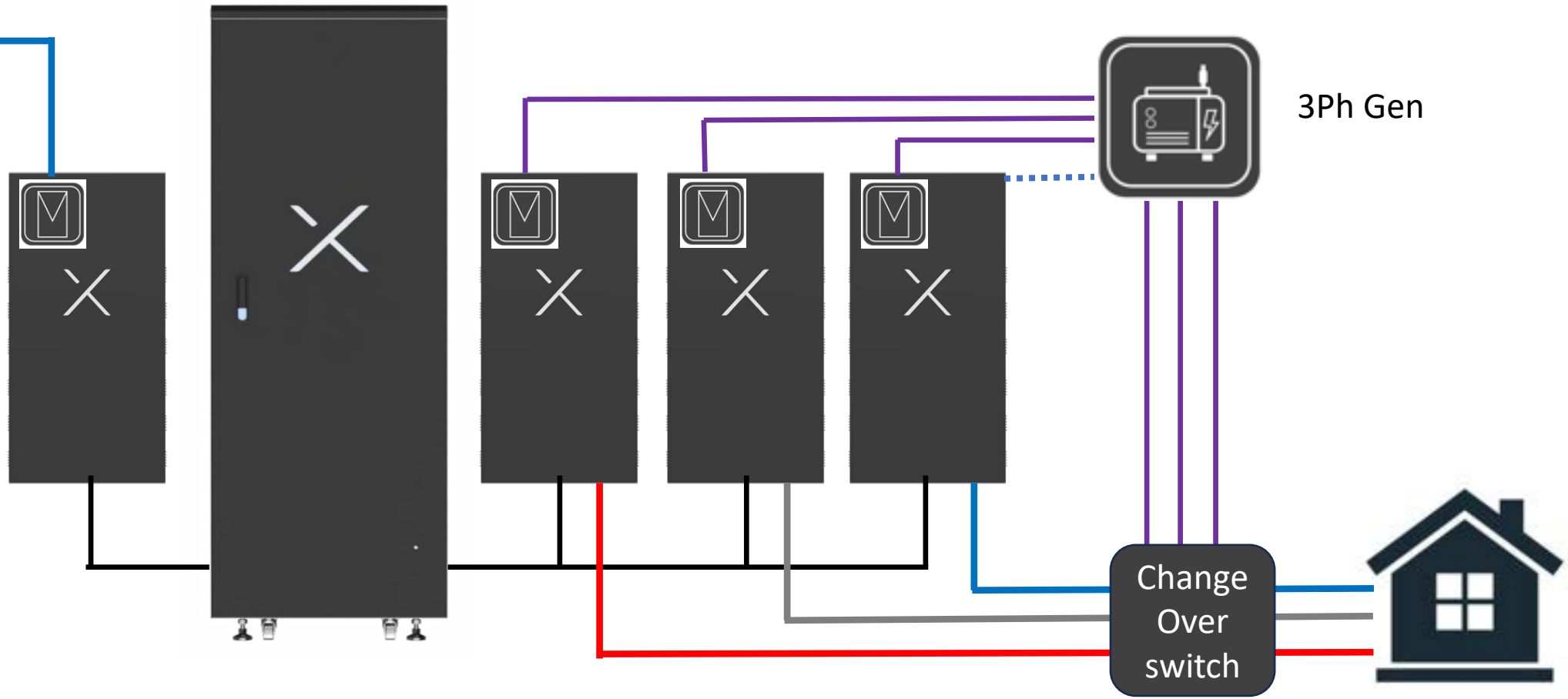
On-Grid 3 PH Parallel



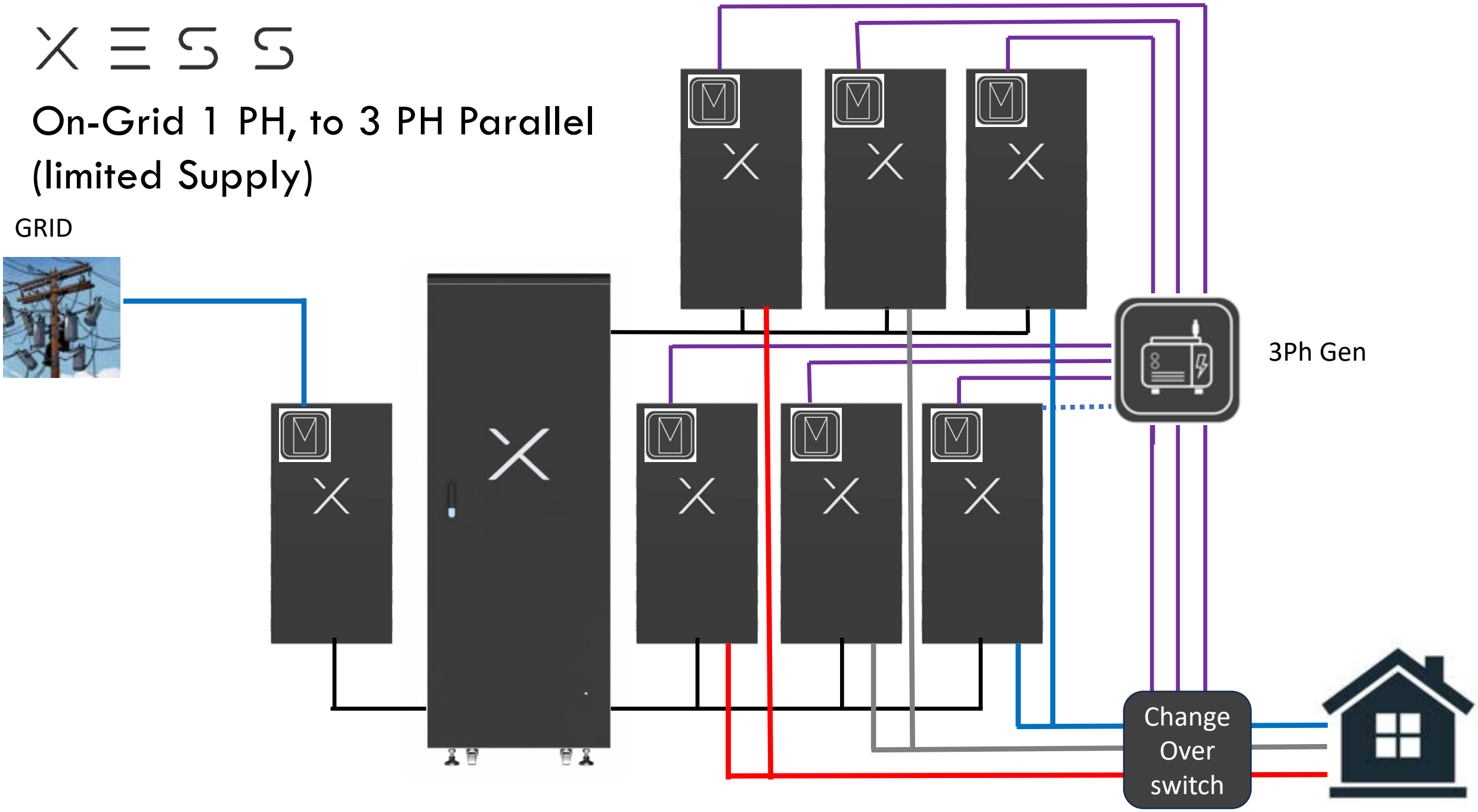
XESS

On-Grid 1 PH, to 3 PH (limited Supply)

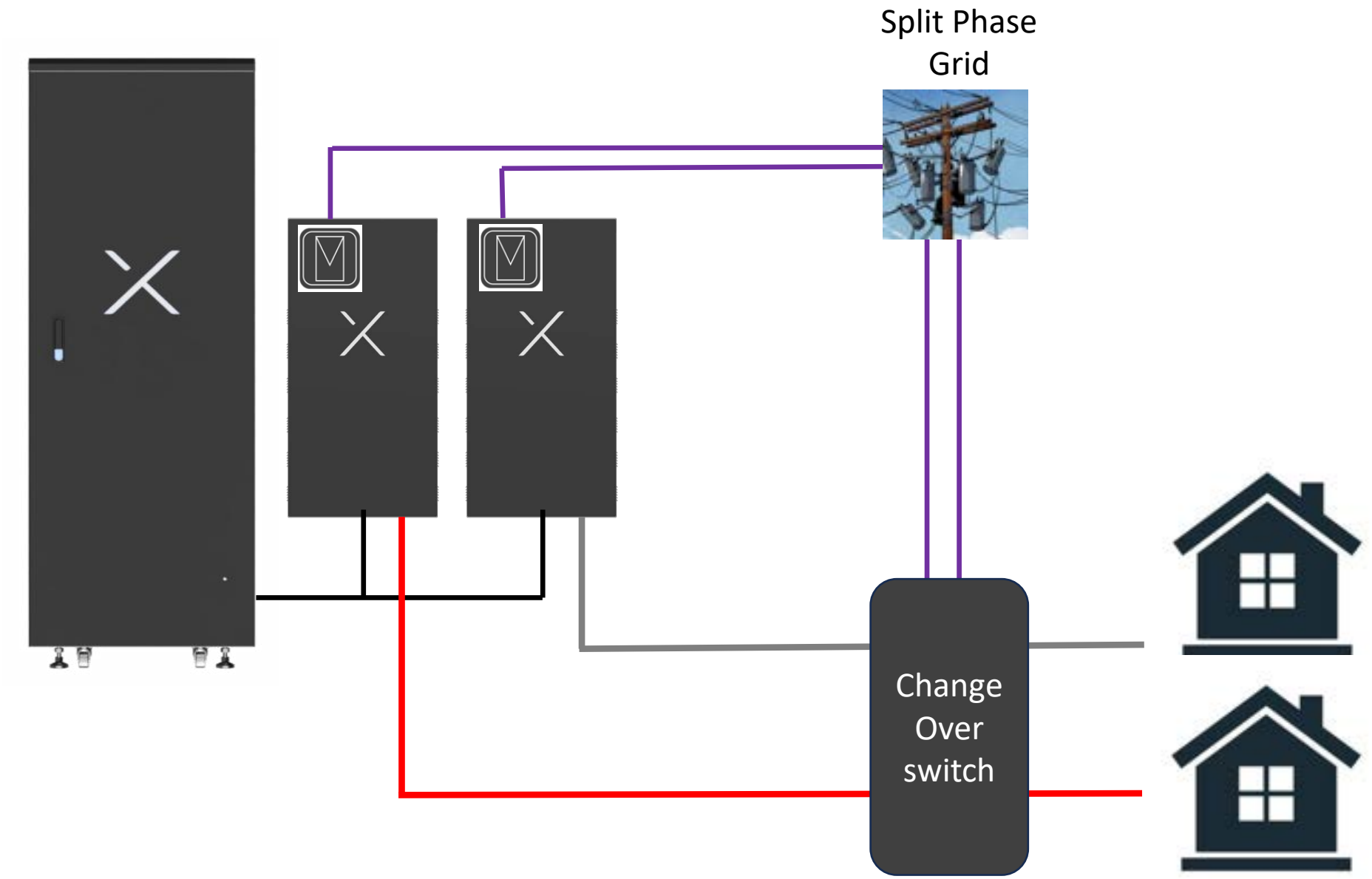
GRID



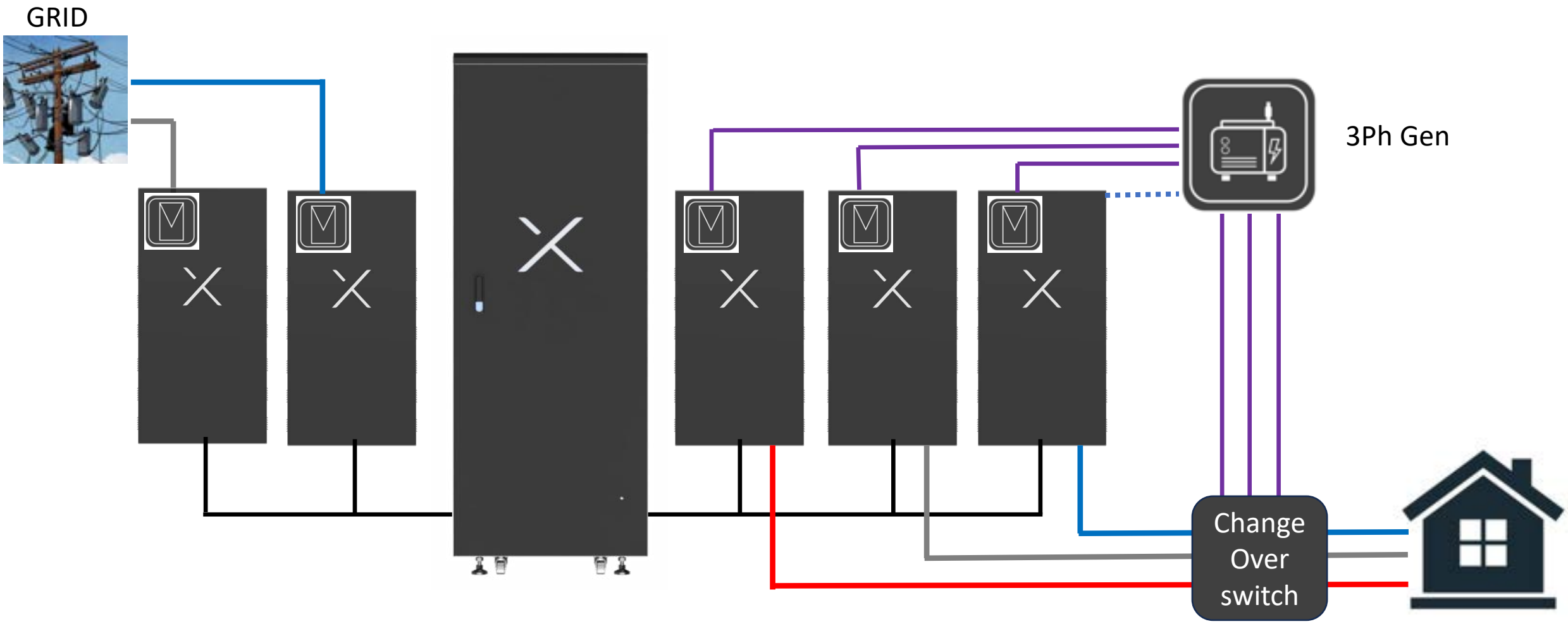
On-Grid 1 PH, to 3 PH Parallel (limited Supply)



On-Grid 1 PH, Split Phase



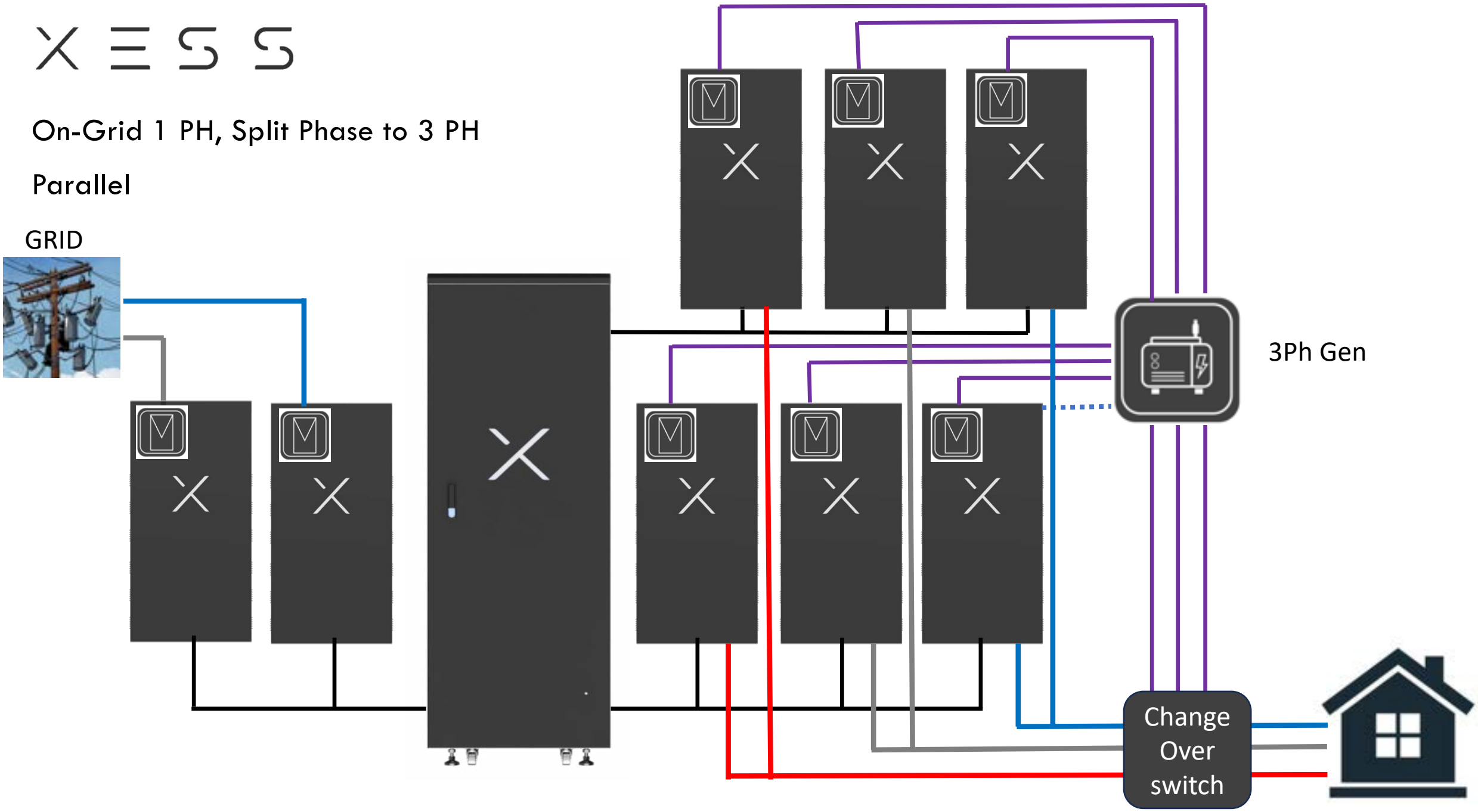
On-Grid 1 PH, Split Phase to 3 PH



XESS

On-Grid 1 PH, Split Phase to 3 PH

Parallel



Setting the benchmark for modular power systems